THE SCIENTIFIC AMERICAN.

THE ADVOCATE OF INDUSTRY AND ENTERPRISE, AND JOURNAL OF MECHANICAL AND OTHER IMPROVEMENTS.

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THE
SCIENTIFIC AMERICAN.
PUBLISHED EVERY THURSDAY MORNING, AT THE
Sun Buildings,
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ALSO, AT NO. 12 STATE ST., BOSTON, AND NO. 21 ARCADE, PHILADELPHIA.
(The Principal Office being at New York,
BY RUFUS PORTER.

Each number of this paper is furnished with from two to five ORIGINAL ENGRAVINGS, many of them elegant, and illustrative of NEW INVENTIONS, SCIENTIFIC PRINCIPLES, and CURIOSITIES; and contains as much Interesting Intelligence as six ordinary daily papers, consisting of notices of the progress of Mechanical and other *Scientific Improvements*,—American and Foreign Inventions; Catalogues of American Patents;—Scientific Essays, illustrative of the principles of the Sciences of Mechanics, Chemistry, and Architecture;—Instruction in various Arts and Trades;—curious Philosophical Experiments;—Miscellaneous Intelligence, Poetry, and, occasionally, Music.

This paper is especially entitled to the patronage of Mechanics and Manufacturers, being the only paper in America devoted to the interests of those classes; but is particularly useful to Farmers, as it will not only apprise them of improvements in agricultural implements, but instruct them in various mechanical trades, and guard them against impositions. As a family newspaper, it will convey more useful intelligence to children and young people, than five times its cost in school instruction. Another important argument in favor of this paper, is, that it will be worth two dollars at the end of the year, when the volume is complete, and will probably command that price in cash, if we may judge from the circumstance that old volumes of the "New York Mechanic," by the same editor, will now command double the original cost.

TERMS.—"The Scientific American" will be furnished to subscribers at $2, per annum,—one dollar in advance, and the balance in six months.

Five copies will be sent to one address six months, for four dollars in advance.

Any person procuring two or more subscribers, will be entitled to a commission of twenty-five cents each.

TERMS OF ADVERTISING.—For 10 lines, or less, 50 cents for the first, and 12 1-2 cents for every subsequent insertion.

The Printer's Song.

Print, comrades, print; a noble task
Is the one we gaily play;
'Tis ours to tell to all who ask
The wonders of earth and sky.
We catch the thought, all glowing warm,
As it leaves the student's brain;
And place the stamp of enduring form
On Poet's airy strain.
Then let us sing, as we nimbly fling
The slender letters round;
A glorious thing is our laboring,
Oh where may its like be found.

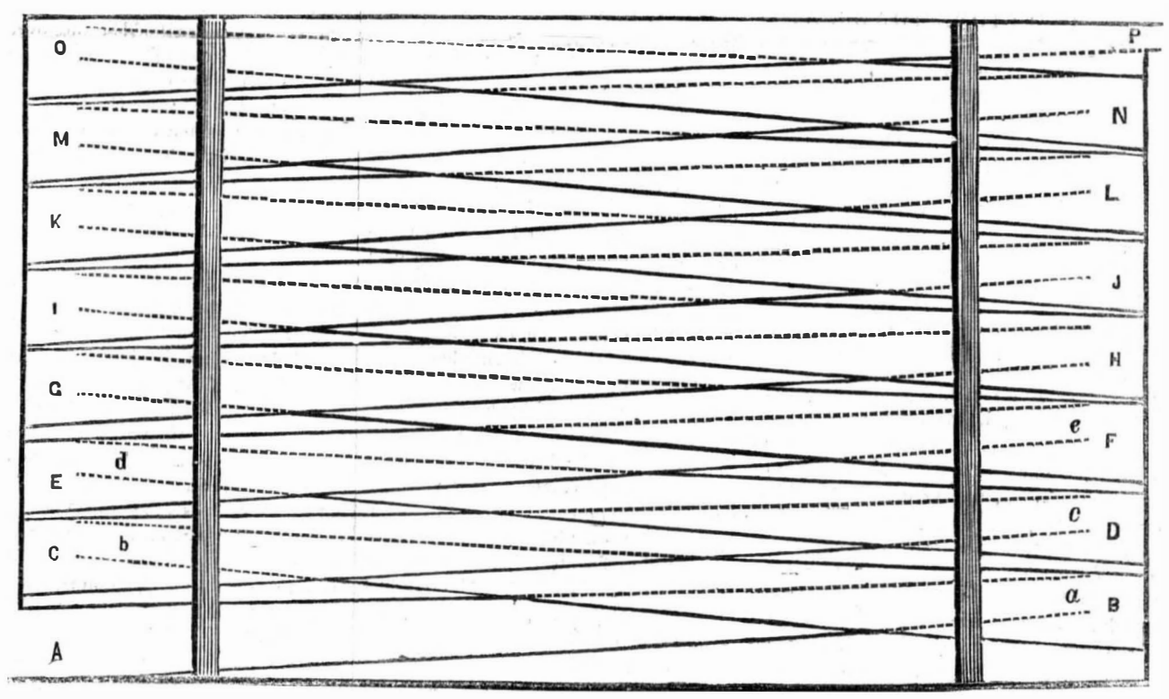
Print, comrades, print; the fairest thought
Ever limned in Painter's dream,
The rarest form e'er sculptor wrought
By the light of beauty's gleam,
Though lovely, may not match the power
Which our own proud art can claim—
That links the past with the present hour.
And its breath— the voice of fame.
Then let us sing, &c.

Print, comrades, print; God hath ordained
That man by his toil should live;
Then spurn the charge that we distained
The labor that God should give!
We envy not the sons of ease,
Nor the lord in princely hall,
But bow before the wise decrees
In kindness meant for all.
Then let us sing, &c.

Articles found in a Kitchen Drawer.

Three aprons. two dusters, the face of a pig,
A dirty jack towel, a dish-clout and wig;
A foot of a stocking, three caps and a frill,
A busk and six buttons, mouse trap and quill;
A comb and a thimble, with Madona bands.
A box of specific for chops in the hands;
Some mace and some cloves tied up in a rag,
And empty thread paper, and blue in a bag;
Short pieces of ribbon, both greasy and black,
A grater and nutmeg, the key of the jack;
An inch of wax candle, a steel and a flint,
A bundle of matches, a parcel of mint;
A lump of old suet, a crimp for the past,
A pair of red garters, a belt for the waist;
A rusty bent skewer, a broken brass cock,
Some onions and tinder, and the drawer lock;
A bag for the pudding, a whetstone and string,
A penny cross bun, and a new curtain ring;
A print for the butter, a bunch of old keys,
Two pieces of soap, and a large slice of cheese;
Five pewter tea-spoons. a large lump of rosin,
The feet of a hare, and corks by the dozen;
A card to tell fortunes, a sponge and a can,
A pen without ink, and a small patty pan;
A rolling-pin pasted, and common-prayer book,
Are the things which I found in the drawer of the cook.

SELF-ACTING MARINE PUMP.



EXPLANATION.—We find this invention a difficult subject to illustrate, and are constrained to adopt a mere outline engraving for this purpose, as neither a full nor sectional drawing will shew its peculiarities. This cut does not represent the proper proportion of the pump, but will suffice to shew the principles of its construction. It consists of a series of flumes four or five feet in length and so arranged that when placed in the hold of a vessel, a very slight rolling motion of the vessel will cause the water to ascend from the bottom, through the series of flumes, till it is discharged above the deck. Each flume is two feet wide and one foot deep at one end, but only one foot wide and six inches deep at the other. The first flume, A a, is open at the large end, at A, and is placed crosswise, or at right angles with the keel of the vessel, so that when the vessel careens to starboard, the water in the hold, enters at A, and is discharged into the next flume, B b. Then when the vessel rolls to larboard, this water rushes through the flume B b, and is discharged into the flume C c. By the next motion to starboard, this first quantity of water is discharged into the flume E e, while another quantity passes through A a, into B b. In this way the water progresses upward in considerable quantities, by the rolling motion of the vessel, through F, G, H, &c., till discharged above the deck of the vessel, as represented at P: it being understood, however, that the series is to be extended higher in proportion to the length of the flumes, than is represented by this engraving. It may be thought preferable, in some cases, to make the flumes longer, and place them fore and aft, or in the direction of the keel, that the water may be elevated by the undulating motion of the bows and stern of the vessel: but in either case, the water is sure to ascend from the hold to the deck, whenever the vessel is subject to any considerable motion by the swell of the sea. This pump was invented by Mr. T. Robjohn, of this city, and a model thereof may be seen at this office.

IMPORTANT DISCOVERY.—Not long since, Mr Bencraft, a gentleman residing in Devonshire, attended the weekly meeting of the Royal Agricultural Society, at their house in Hanover square, and presented the council with specimens of his newly invented agricultural and driving hames, and elastic saddle. The principle of the former invention transfers the draught from the hitherto injurious position, (at the point of the shoulder,) to the withers or front of the spine, thereby imparting a great increase of muscular power to the horse over his load, giving him the entire and free use of his fore limbs, and at the same time protecting him from the suffering of galled shoulders. Many of the first veterinary surgeons in the country having acknowledged that these benefits are secured by Mr. Bencraft's invention, (the use of it having already released many horses from their sufferings.) it is with great pleasure we recommend it to the public; and looking at the subject, whether regarded on the score of utility or humanity, we consider Mr. Bencraft entitled to the thanks of the community, and we rejoice to hear that his inventions are warmly patronized by that excellent institution, the "Royal Society for the Prevention of Cruelty to Animals." The saddle, which is already in extensive use, affords a mechanical protection to the spine and dorsal muscles, thereby enabling the horse to carry his rider with increased facility and speed, and at the same time affording a delightfully elastic seat to the rider, by which concussion and fatigue are almost wholly removed.

BRIDGE OVER THE NIAGARA RIVER.—A writer in the Rochester Advertiser was led to make the following estimate of the cost of a stone bridge over the niagara river at a point below the falls, where it is only 332 feet wide. The writer's calculations are made for a bridge of a single stone arch, and the practicability of the scheme is not at all doubted. Supposing, says the writer, the bridge to be 350 feet long and 30 feet wide, there would be room for a railroad track, a carriage way, and side walk for foot passengers. It is estimated to cost as follows:

Excavation in the bank foundation,	$5,000
Plank centre 440 feet long, 30 feet wide, 8 feet thick 1,300,000ft. plank $7,	9,000
Expenses and putting up of centre,	$10,000
Stone masonry, 22,000 cubic yds. $4.	$88,000
Contingencies,	$8,000
Total	120,000

DISCOVERY OF THE MAGNETIC POLES.—The Cincinnati Chronicle has the following:—A scientific gentleman, who was present at Dr. Locke's lecture on Monday evening, says it was remarkably interesting. The subject was electro magnetism, heat, and their kindred topics. Among other things he mentioned the discoveries he had made and the facts accumulated in regard to the magnetic poles, and the line of greatest intensity. This has been a subject of examination with him for several years. He considers now that the magnetic poles are discovered, at least their immediate locality. His views on this subject have been confirmed by other observers. One of the magnetic poles is in Siberia and another in the northern part of America. The line of greatest intensity is near the shores of Lake Superior.

MANUFACTURES IN TENNESSEE.—There are no less than fifty cotton factories in Tennessee. They consume annually about 10,000 bales of cotton. There are many others employed in spinning and weaving both cotton and wool. Jeans, osnaburgs, linseys, kerseys and bedticking are made at Lebanon, Shelbyville, Franklin and Winchester. At Lebanon, 100 hands are employed in the manufacture of the coarser kinds of cotton and woolen negro clothing. One half of these hands are blacks—slaves of course—and they are said to be expert in almost any department. The goods manufactured are disposed of at home and in the Southwestern States. The Nashville Orthopolitan, from which we learn these facts, considers that the success of the factories in Tennessee disproves the opinion held by many, that manufacturing establishments cannot be carried on with advantage where slavery prevails. The manufacture of blankets is about to be introduced into Tennessee for the first time at Lebanon.

MAGNITUDE OF THE LAKES.—Lake superior is 400 miles long, 80 miles wide, 900 feet deep, and contains 32,000 square miles. It ts 596 feet above the level of tide water.

Lake Michigan is 220 miles long, 70 miles wide, 1000 feet deep and 578 feet above tide water. It contains 22,000 square miles.

Lake Huron is 240 miles long, 80 miles wide, 1000 feet deep, and contains 20,000 square miles. It is 571 feet above tide water.

Green Bay is 100 miles long, 20 miles wide, and contains 2000 square miles.

Lake Erie is 240 miles long, 40 miles wide, 840 feet deep, and contains 9000 square miles. It is 565 feet above tide water.

Lake Ontario is 180 miles long, 35 miles wide, 500 feet deep, and contains 6,400 square miles. It is 232 feet above tide water.

Lake St. Clair is 20 miles long, 14 miles wide, 20 feet deep, contains 300 square miles. It is 570 feet above tide water.

American Lakes are computed to contain 1,400 cubic miles of water,—more than one-half the fresh water on the globe.

MARBLE CEMENT.—An improved cement has been recently introduced which is attracting much attention among builders. It is formed of plaster of Paris, (Sulphate of Lime,) and Alum. Common *boiled* plaster is steeped in a solution of alum, and recalcined, when it is fit for use. This cement is incapable of enduring the weather, and is principally esteemed for the beautiful stucco which it forms, and which, from its great hardness and brilliancy of surface, bears a very near resemblance to marble. It may be colored by simply imparting the desired hue to the water used in mixing it. It is susceptible of a very high polish, and is extinsively used for interior decorations wherever its existence and the knowledge of its composition are known.

"I'LL CONSULT MY WIFE."—This is what old Judge Thatcher, of Massachusetts, said to Blount of North Carolina, when they were members of Congress, at Philadelphia—and when the latter challenged the Judge to mortal combat, "I'll consult my wife, sir," replied the Judge, taking off his three cornered hat, and making a low bow; "and if she is willing I will favor you with a meeting."

THE GREAT WALL OF CHINA.—This stupendous wall, which extends across the northern bounds of the Chinese empire, is deservedly ranged among the grandest labors of art. It is conducted over the summits of high mountains, several of which have an elevation not less than 5225 feet, (nearly a mile.) across deep valleys. and over wide rivers, by means of arches. In many places it is doubled and trebled, to command important passes; and at the distance of nearly every 100 yards is a tower or massive bastion. Its extent is computed at 1500 hundred miles; but in some parts where less danger is apprehended it is not equally strong and complete, and towards the northwest, consists merely of a strong rampart of earth. Near Koopckoo it is twenty five feet thick; some of the towers, which are square, are forty eight feet high, and about forty feet in width. The stone employed in the foundations, angles, &c., is a grey granite; but the materials, for the greatest part consist of bluish bricks, and the mortar is remarkably pure and white.

ANTHRACITE RAILROAD IRON.—The Philadelphia Ledger says: "A T rail, 18 feet long weighing 50 pounds per lineal yard, manufactured by the 'Montour iron company,' at Danville, Pa., with anthracite coal alone, has been received for the exhibition of the Franklin Institute, Philadelphia. This is one of the first rails manufactured in America or in Europe of anthracite iron, and so far as we can judge of the quality from an inspection of the bar, taking it into consideration also that it is pure mine iron, from the celebrated Montour's ridge ore without any admixture of cinder iron, we think there is every probability that it will be found to render much better service than the imported English rails. It is also a highly creditable specimen of American mechanical skill in heavy manufactures. We congratulate Pennsylvania on this new source of wealth, which, we doubt not, in addition to supplying our own railroads will soon become an article of export. Thus Pennsylvania, like Sparta of old will pay off her debts with her iron coin."

PAINTER'S MISERIES.—Requesting a lady who is the bearer of a squint, to oblige you for a moment by looking at you in order to get a peculiar expression, when she, half-surprised, half-angry, wondering at your stupidity, exclaims, "Why, indeed, sir, I have been looking at you this half hour." Hearing a person say, "Well, to be sure, if it wasn't for the face, I should think that was meant for Miss E," it being intended for that identical person. Painting an old gentleman, who for the first hour grins and chuckles you out of all patience, and then, by way of making amends, falls asleep the second.

BEAUTY.—An ancient impertinent rhyme, divides female beauty into four orders, as follows:

"Long and lazy, little and loud,
Fair and foolish, dark and proud."

Arrant scandal! the following is the true reading:

Tall and splendid, little and neat,
Fair and pleasant, dark and sweet,

Or, the exact translation:

High and beauteous, little and witty,
Fair and lovely, dark and pretty.

CATALOGUE OF AMERICAN PATENTS

ISSUED FROM AUG. 16th TO 26th, 1845.

To Andrew Kayser, of Fulton, Mo., for improvement in lard lamps—20th Aug.

To Solomon Anderson, of Garretsville, N. Y., for improvement in hammers—20th Aug.

To Jordan L. Mott, of New York, for improvement in revolving chairs—Aug. 20.

To Nehemiah P. Stanton, of Syracuse, N. Y., for improvement in the manufacture of salt—20th Aug.

To James Leffel, of Springfield, Ohio, for improvement in the arrangement of wheels and shafts for communicating power—20th Aug.

To Francis S. Low and John S. Leake, of Albany, N. Y., for improvement in cooking stoves—20th Aug.

To Charles Arthur, of Keeseville, N. Y., for improvement in tools for dressing grindstones—26th Aug.

To Solomon Guess, of Boston, Mass., for improvement in composition for removing grease from cloth, &c.—26th Aug.

To T. C. Benteen and H. W. Zimmerman, of Petersburg, Va., for improvement in washing-machines—26th Aug.

To David Harrington, of German Flats, N. Y., for improvement in boot-lasting machines—26th Aug.

To Horatio Hoskins, of Scipio, N. Y., for improvement in washing-machines—26th Aug.

To John Young, of West Golway, N. Y., for improvement in boot-crimps—26th Aug.

To Joel H. Ross, of New York, for improvement in swings for exercising—26th Aug.

To David C. Moorhead, of New York, for improvement in galvanic rings, belts, &c.—26th Aug.

To Israel Lamborn, of Marshallton, Pa., for improvement in bee-hives—26th Aug.

Patents Re-issued from the 1st to the 31st day of August, 1845, inclusive.

To James Roy, John Knower, Benjamin Knower, and Andrew Roy, of Watervliet, New York, for improvement in the machine for making butts and hinges: original patent dated 17th May, 1836—re-issued Aug., 1845.

To Samuel Rust, of New York, for improvement in lamp-wicks:—original patent dated 4th April, 1845—re-issued 16th Aug., 1845.

PATENTS ISSUED IN 1844.

(Continued from No. 6.)

CLASS XIV.—*Lumber, including machines and tools for preparing and manufacturing—such as sawing, planing, mortising, shingle and stave, carpenters' and coopers' implements.*

Machinery for making barrels, Isaac Crossett, East Bennington, Vt.—July 1.

Improvement in machinery for cooperage—Horace Baker, McLean, N.Y.—July 30.

Method of securing boring machines to the article to be bored, Peter Baylor, Salem, O.—July 1.

New machine for boring timber, Thos. J. Russell, Franklin Square, O.—Oct. 3.

Machinery to prepare wood for making boxes, J. H. Stevens, New York—Dec. 19.

Improvements in the mode of splitting hoops, William Rease, Philadelphia, Pa.,—Sept. 3.

Lathe for turning boats' oars, B. and A. F. Potter, Hubbardstown, Mass.—Jan. 20.

Lathe for turning irregular forms, Edwin Tucker, Bucyrus, O.—Oct. 24.

Improvement in lathe for turning spools, J. H. Cary, North New Salem, Mass.—Aug. 21.

Lathe for turning wood tapering. Wyllys Avery, Salisbury, N. Y.—June 5.

Method of Sawing laths and clapboards, E. C. Gilman, Canaan, Ct.—Aug. 23.

New machine for setting logs on the mill-carriage, W. B. Palmer, Brookfield, N. Y.—July 4.

Mode of cutting match splints, Hervy Law, Wilmington, N. C.—Aug. 28.

Improvement in setting the bitt in bench plane, Levi Sanford, East Solon, N. Y.—Nov. 26.

Circular saw for cutting off piles under water, E. E. Cole, Boston, Mass.—Sept. 14.

Improvement in the manner of applying the circular saw in sawing lumber, John K. Mayo, Orrington, Me.—March 20.

Machine for filing saws, Calvin B. Rogers, Saybrook, Ct.—Dec. 7th.

Self-setting apparatus for setting logs on the saw-mill carriage, Benjamin Webb, Warren, N. Y.—May 6th.

Setting logs on the mill-carriage, John B. Squeir, Liberty township, O.—Oct. 9.

Improvement in the mode of steadying the logs on the carriage, Henry Stanton, Richland, N. Y.,—July 16.

Head and and tail blocks of saw-mill, Thos. C. Theaker, Bucyrus, O.—Jan. 20.

Self-acting head and tail blocks of saw-mills, J. J. Parker, Plymouth, O.—June 13.

Improvement in the mode of setting logs on the mill-carriage, F. M. Stetson, Sangerfield, N.Y., and John Eaton, Brookfield, N.Y.—July 15.

Mode of setting saw logs and opening and shutting the gates of saw-mill, N. P. Stearnes, Linklean, N. Y.—Oct. 30.

Tail blocks of saw-mills, John Miller, Williamsport, O.—Jan. 20.

Machine for making scythe-handles and other articles, James Embree, Marshalton, Pa., Aug. 7.

Improvement in the method of cutting shingles, Wm. Wood, Westport, Ct.: March 10: J. C. Gillott, Bloomfield, Mich., re-issued April 3; Jonathan P. Bartley, Flanders, N. J.: May 25; Tillot Cole, Kent, N. Y.: Nov. 26.

Mode of sawing shingles, Israel G. Johnson, Augusta, Me.—Aug. 12.

Improvement in the method of shaving shingle, Simeon Wood, Worcester, Mass.—Jan. 15.

Tenoning and mortising machine, Elbrige Lyman, Northfield, Mass., May 25.

Tonguing and grooving, Chas. W. Brown, Boston, Mass.—Aug. 14.

Improvement in the bench-vise, Lawren M. Peck Philadelphia, Pa.—July 18.

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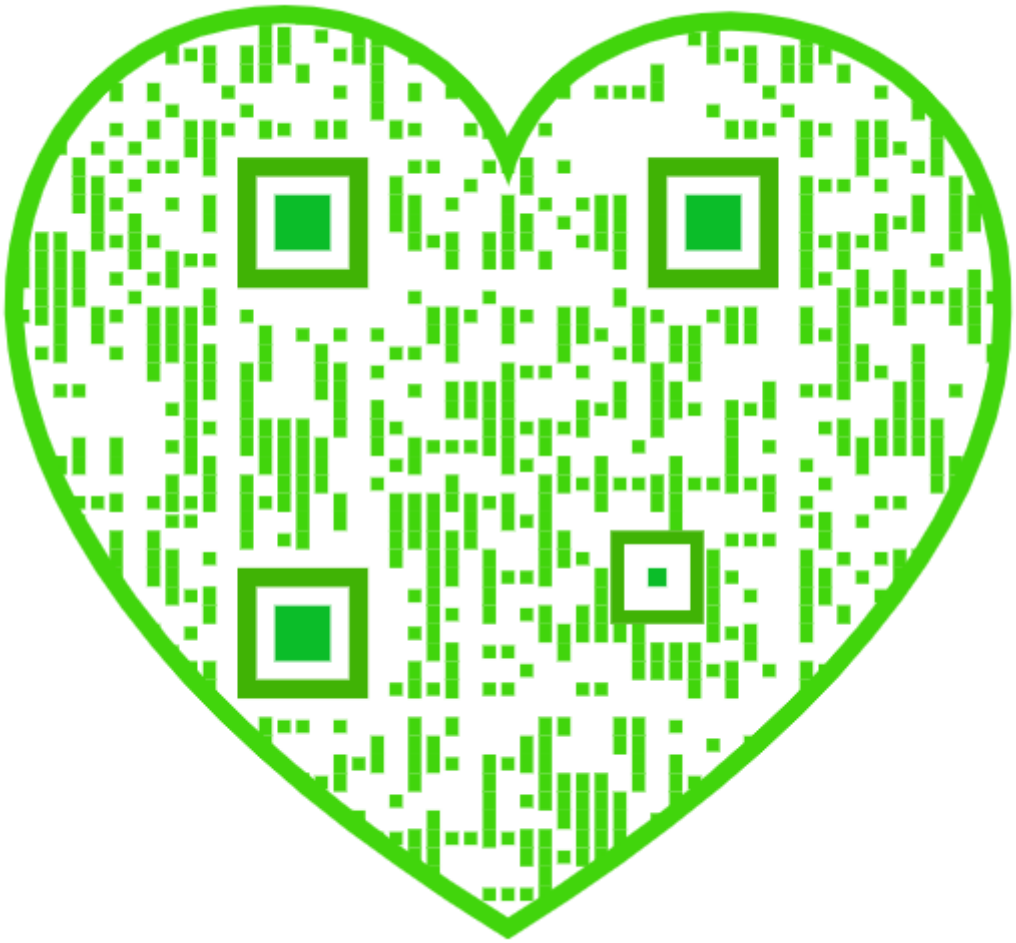
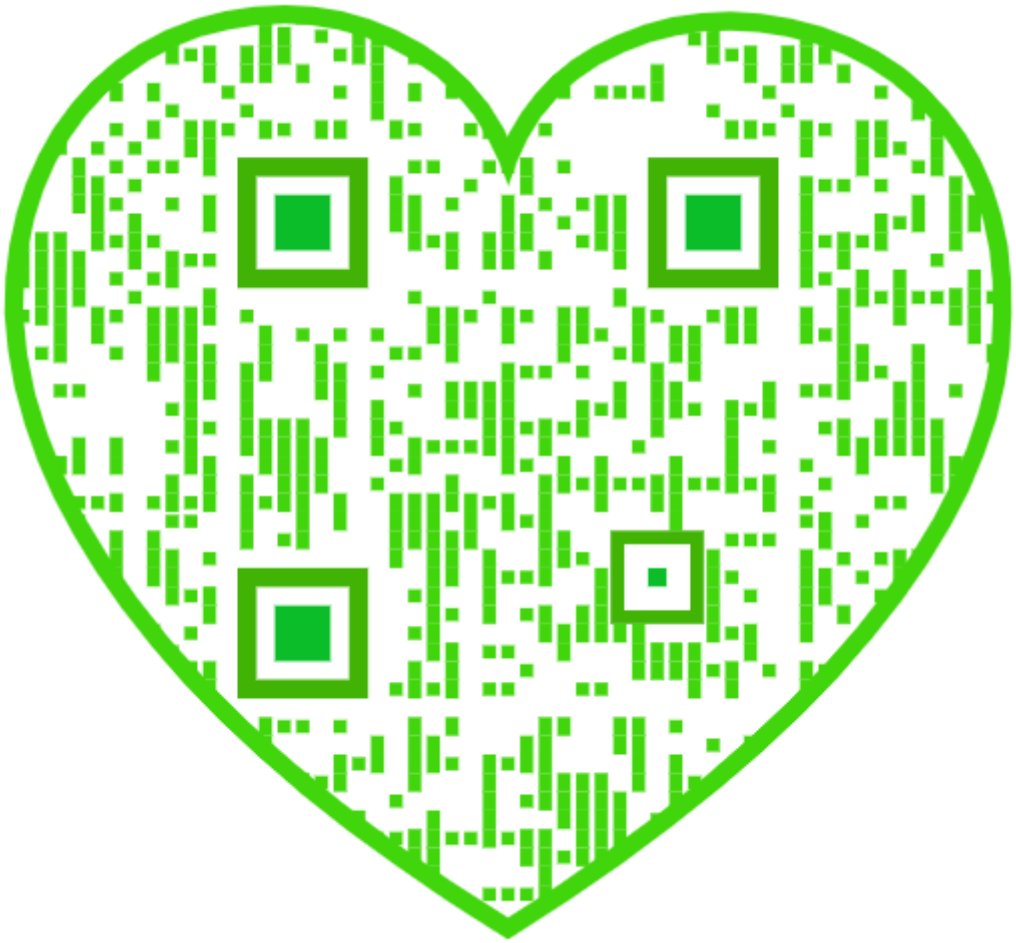




SCIENTIFIC AMERICAN

NEW-YORK, THURSDAY, NOVEMBER 27.

To Correspondents.—We have received several communications on the subject of New Inventions, &c., during the week past, and shall notice them in our next number.

Back Numbers.—As the demand for back numbers from the commencement, is extensive and increasing, we shall re-print them in a few days, and supply all who may order them in due season.

To you, Reader, in particular: we would just say in a whisper,—if you like this paper pretty well, don't forget to speak of it to your neighbors at every opportunity; but if you *don't* like it, why then just please to hold your tongue,—that's all.

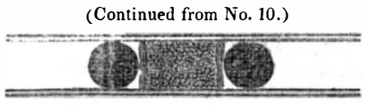
The Universal Revolution, *by the Progress of Science*, may be an appropriate title to the "narrative of events between the years 1846 and 1856," alluded to in our last number. We shall probably commence the publication in this paper in two or three weeks, continuing it through twenty or more numbers: our engravings for the work are already in progress.

Communications.—Our patrons and readers are respectfully requested to send us notices of new Mechanical Inventions and other improvements, manufactories, &c., that may come under their observation, and may be deemed worthy of public notice. We shall pay the postage on such communications with pleasure.

New Arrangement.—We have the satisfaction to announce, that, for the advancement of our facilities in maintaining and improving the high character to which our favorite "Sci. Am." has already attained, we have made arrangements with Mr. Samuel S. Mallery, a gentleman of well known abilities, to become interested in the publication of this paper; and that it will in future appear under the names of Porter & Mallery.

Science of Mechanics.

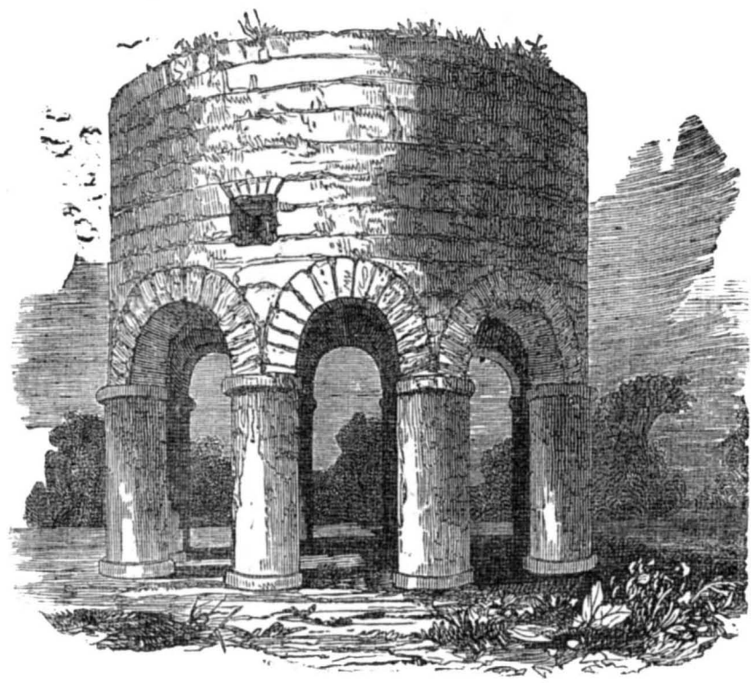
(Continued from No. 10.)



Double Velocity by Quadruple Power.—The fact that quadruple power is required to produce double velocity, may be in some measure illustrated by the subject of re-action. It has been before stated, that a specific power implies force, distance, and time: and there can be no such thing as force exerted without a corresponding re-action. When a ball is discharged from a gun, by the expansive force of ignited gunpowder, the force exerted on the ball to overcome its inertia and give it motion, is no greater than that exerted in the opposite direction on the gun. If a gun is charged with a ball and powder sufficient to project the ball with a velocity equal to one mile per minute: and if the gun is on board a car which is moving with a velocity of one mile per minute,—then, if the gun is discharged in a direction contrary to that of the motion of the car, the force exerted on the ball will merely overcome its momentum, thus producing rest: so that the ball, when it leaves the gun, will fall vertically to the earth. Now for the convenience of illustration, we may suppose that the length of the gun is the one-sixtieth of a mile, so that the time required for the ball to pass out of the gun, is one second. Then, if a greater force is exerted, so as to project the ball with an equal velocity in the opposite direction,—which amounts to the same thing as double velocity—the time occupied by the ball in passing out of the gun, is a half second. Now it will appear evident, that the exertion of merely double the original force, continued only half of a second, cannot produce double the velocity, notwithstanding that double the power has been applied; as appears from the circumstance that the force has been doubled, to the extent of the original distance—the length of the gun; but let this double force be applied during the time of one second, thus passing double the distance—which is evidently requisite to produce a double velocity—and the power applied will prove to have been quadruple; because a double force has been applied to a double distance notwithstanding that the *time* has been equal. To return to the subject of re-action; in all applications of force, it must be exerted in at least two opposite directions at the same time. Even the attraction of gravity, which impels a falling body towards the earth, is at the same time equally exerted to impel the earth towards the falling body. And when a gun is discharged, a motion is produced in the gun, if not confined, much greater in proportion to its weight, than to the ball. But if an open gun barrel be charged in the centre, with a ball on each side of the powder, both balls, when discharged, will be projected with equal velocity. We will suppose then that this central charge is sufficient to project both balls with a velocity of one mile per minute; and that the gun is on board a car that is running with a speed of one mile per minute; if the gun be thus discharged in the direction of the motion of the car, one of the balls will merely fall at rest, while the other will have acquired a velocity of two miles per minute. Now it will be readily seen that as much force must have been applied to put the balls in motion along with the car, before being discharged, as would be applied by the explosion when discharged: and this power, in addition to the double power of the charge, making, in all, quadruple power, must have been expended, and the result is double velocity in one ball only: thus clearly illustrating the fact that quadruple power is required to produce double velocity.

(To be continued.)

Somebody says that no man knows what he can do until he tries. Let him try it.



OLD STONE TOWER, AT NEWPORT, R. I.

This mysterious monument of antiquity, which appears to have excited but little curiosity for centuries, has now become one of the wonders of the world. The building, of which the above is a correct representation, stands near the summit of a hill in the town of Newport, R. I. It is built of rough pieces of stone, laid in courses, strongly cemented by a mortar of sand and gravel, which nearly equals the stone itself in hardness; and appears to have been covered with a plaster of the same material. It is nearly twenty-five feet in height; its diameter outside is twenty-three feet, and inside eighteen feet nine inches. It is circular, and is supported upon eight arches resting on thick columns about ten feet high; the height of the centres of the arches from the ground is twelve feet six inches. The foundation extends to the depth of four or five feet. The columns are peculiar, having only half capitals, which seem to have been simply rounded slabs of stone, of which the part projecting on the inside had been cut away; hollows are formed in the interior of the walls at some little height above the arches, as though intended to receive the ends of beams and rafters to support a floor which formerly was there, according to the testimony of some of the older inhabitants of Newport, and which is supposed in a scene described by Cooper. The building is pierced by two windows, one of which is seen in the engraving. The tradition of the town is, that it had once a circular roof, and that it had been used successively as a windmill, a place for stowing hay, and a powder-magazine. What excites so much curiosity concerning this tower, is the fact that no person living in or about Newport, knows anything of its origin, and no record is found in history of its being seen or noticed by the early settlers of the Island. While it appears very improbable that a tower of this description should have been erected by the aborigines, or that it should have been discovered by the early settlers, without some note thereof being made by the historian of those times, it is still more improbable that such a building should have been erected by either the early settlers or their English successors. Much having been written on the subject by antiquarians, without approaching any definite conclusion with regard to the author or occasion of its construction, we shall dismiss the subject with the simple conjecture, that it is a fabric of remote antiquity, intended for a temple of Pagan worship, and erected by the process of heaping up earth round the building as it progressed; thus furnishing facilities for elevating the stones, as has been practised by the Chinese and other nations: but that the sachem builder having died or failed before the building was complete, the earth was left around the edifice, till becoming overgrown with trees the building was so far concealed from view as not to attract the notice of the English settlers, until the land, being cleared, was gradually washed away by storms of rain, which, by a process too slow to induce remark, eventually brought the whole fabric to view from its foundation.

Scraps of Curious Information.

The number of different plants in the world has been estimated at from 30,000 to 100,000.—The largest Tree in the world is in Africa where several negro families reside inside of the trunk.—The largest flower in the world is 3 feet in diameter.—The 'Cow Tree' in South America produces milk from which the people obtain regular supplies.—There are no less than 900 different species of roses, and 60 of pinks.—There are 360,000 seeds in the capsule of a Tobacco plant.—The Nepenthus, of India, furnishes water in its leaves, which not only have *pitchers* but *covers* to them.—The Pear leaf has 24,000 pores to the square inch, on the under side.—The Pink has about 38,500. Some plants have as many as 160,000.---There are 140 different species of Oak in the world, 70 of which are found in America and 30 in Europe.---The largest Oak in the world is in Dorsetshire, England, which measures 68 feet in circumference.---There are 40 different species of Pine; the *pinus dulglacius*, on the Columbia river, is the tallest tree in the world, as it grows to the stupendous height 234 feet.---The Canada Thistle, the enemy of all farmers, is a native of Canada, but it has crossed the Atlantic, by means of *wings* with which its seeds are provided.---Barley has been sowed, with success, 140 years after it was produced! Wheat may be kept with the germinating principles for ages. Seeds of different grasses will vegetate after having been buried in the earth a thousand years.---The Ewe Tress of Surry, England, stood in the days of Julius Ceasar. There is an apple tree in Hartford, Conn, 200 years old; a Fig tree in Palestine 780 years; an Olive tree in Asia Minor, 850 years old; a live Oak in Louisiana, 1,000 years old; a pine tree in Asia Minor, 1890 years old---A Ceder on Mount Lebanon, 2120 years old; a Chesnut on Mount Ætna (Sicily) 2,600 years old; a Sycamore, in the Bosphorus 4000 years old.---Some person who has nothing else to do has ascertained that there are 550,000 grains in a bushel of wheat.---The diameter of each globule of blood in a man is from 2 to 4,000th part of an inch.---The seed of the puff ball or hycopudon, is 125,000 times smaller than a human hair.---The weight of a particle---that is the smallest part of copper—is the one hundred and four millionth part of a grain.---Gold can be beaten so thin that 1500 leaves of it would equal in thickness a common newspaper---or 212,000 leaves would make a thickness of one inch.---Cork, if sunk 200 feet in the ocean, will not rise on account of the pressure of the water.---Wrought iron will hold up 40 tons to the square inch; steel 60 tons.---The strongest cable that can be made is of fine wire, which will hold 90 tons to the square inch---The population of the earth is estimated at one thousand millions. Thirty millions die annually, eighty two thousand daily, three thousand four hundred and twenty one every hour, and fifty seven every minute.---The 14th of January, on an average of years, is the coldest day in the year.---In water, sound passes at the rate of 8,508 feet per second. In air, 1,142 feet per second.---In the artic regions, when the thermometer is below zero, persons can converse at more than a mile distant. Dr. Jamieson asserts that he heard every word of a sermon at the distance of two miles.

Foreign News.

The steamship Britannia arrived at Boston on Thursday last, having made the passage in fifteen days. There is but little news of importance to any but flour dealers, by this arrival. The accounts of the general failure of the potato crops by the rot, especially in Ireland, are of a very serious and alarming character. A great gale and rise of water had occurred at Bremen on the 21st ult. The water was eight feet deep on the ground-floor of many of the houses in the city.

The Madrid Journals of the 11th and 12th are chiefly filled with particulars of the grand levée held in honor of her Majesty's birth-day, which was attended by at least thirteen hundred persons.

Accounts from Italy report that the Pope and Cardinals had retired to the Palace of St. Angelo, at Rome, for personal safety. The States of the Church are convulsed by revolutionary conspiracies against the temporal government of the Sovereign Pontiff.

The Railway speculation in England has received a severe check in consequence of the withdrawing by the Bank of England, of facilities from persons supposed to be engaged in visionary schemes.

Mode of Refining Bullion at the Mint.—If it consist of mixed metals, it is sent into the melting department, placed in a red-hot, clean, blacklead pot, melted, stirred up and mixed, and cast into a homogeneous bar. It is next given to the assayer, who cuts off a piece of the bar, rolls out the piece, clips it with shears, and weighs out exactly 1000 milligrammes thereof, which he wraps up in lead, and places upon a white-hot vessel of bone earth: the whole melts, and oxidizing, every thing present is readily absorbed by the bone earth but the silver or the gold. By weighing what remains, if of silver, the degree of fineness of the mass is ascertained. But if the assay be one of gold, it is removed from the bone earth and melted with about three times its own weight of silver,—the alloy is rolled out and subjected to the action of hot nitric acid which dissolves the silver but leaves the gold refined and pure.

A Wonderful Stone.—A writer in the Boston Mail, in expatiating on the excellence of the Brazilian pebble for spectacle glasses, mentions, among other excellent qualities, that they will constantly adapt themselves to the eye, so that there is no necessity of changing them as the eye grows old. Of course, the pebble glass must constantly swell of increase in convexity, during the life-time of the wearer.

The best method.—The way to make people forsake their errors, is to treat them kindly. Speak to them in a calm and gentle manner. Harsh words should never be indulged in, thinking to reform any one. If a person wishes to correct me of any fault, he must do it kindly and affectionately, or I should be much worse for his interference.

In our list of letters on the fourth page, we have omitted some letters which were destroyed by the late fire: but as our books are correct, our friend will have no occasion for anxiety on that account.

The Art of Painting.

(Continued from No. 10.)

Guilding on Glass.—The glass must be washed perfectly clean and dried; then damp it by breathing on it, or wet it with the tongue, and immediately lay on a leaf of gold, and brush it down smooth. When this is dry, draw any letters or flowers on the gold with Brunswick blacking, and when dry, the superfluous gold may be brushed off with cotton, leaving the figures entire. Afterwards the whole may be covered with blacking, or painted in any color, while the gold figures will appear to advantage on the opposite side of the glass. This work may be elegantly shaded by scratching through the gold with a steel instrument, (in the end of which many sharp points are formed) previous to laying on the blacking. Oil paints of any kind may be substituted in place of the blacking, but will not dry so quick. Silver leaf may be managed in the same manner; but if coloring is required on the silver, the coloring laquers must be spread on the parts requiring it, before the silver is applied. Splendid ornaments may be produced in this way, by first drawing the outlines, as described in painting on glass; and having judiciously applied the laquers, the leaf --gold or silver--may be laid over the whole as above described. Then if any fine black lines or deep shading is required, it may be effected by scratching through the leaf with a pointed instrument, and finished by a full coat of blacking over the whole: it being understood, of course, that the ornament is to appear from the opposite side of the glass.

Bronzing on Glass.—For this purpose the glass may be sized with a very thin coat of dilute copal varnish, and when the varnish is nearly dry, the bronze may be applied through stencils, as described in ornamental bronzing: but if the bronzed figures are to be colored, the outlines of the figures must be first drawn, and the several points stained with laquors, before the glass is sized for the bronze. After the bronze is applied, the figures may be painted with opaque or body paints, and a final coat laid over the whole. If any fine lines of bronze are required in the finishing, the paint may be scratched through with a point as before described, and these lines being slightly sized, the bronze may be applied to the lines without a stencil. The most beautiful figured borders may be formed by means of stencils finely cut for that purpose, the bronze being applied thro' the apertures: and such border figures may be further beautified by having fine line figures drawn with a point through the bronze, prior to the final coat of black, by which the work is finished. The practitioner will find in this branch, a field for an infinite variety of beautiful fancy work, which will afford both amusement and utility.

American Facts.—It is among the worst omens of the day, that we have in the United States no national feeling, no genuine love of country. The traveller in other lands finds everywhere the institutions and productions of a people prized by themselves, though they may be condemned by strangers. Here the order is changed. If any work in literature, art, or science, is by an *American*, it is set down by the mob of gentlemen who talk of such matters, as altogether worthless, or as deserving a favorable regard only on account of its resemblance to something foreign. We recite a few facts, admitted by the world abroan, for the benefit of this sort of people.

Imprimis: The greatest man, "take him for all in all," of the last hundred years, was George Washington, *an American.*

The greatest metaphysician was Jonathan Edwards, *an American.*

The greatest natural philosopher was Benjamin Franklin, *an American.*

The greatest of living sculptors is Hiram Powers, *an American.*

The greatest of living poets is William Cullen Bryant, *an American.*

The greatest of living historians is William H. Prescott, *an American.*

The greatest living ornithologist is John James Audubon, *an American.*

The greatest of living novelists is James Fenimore Cooper, *an American.*

The greatest living painter, in portraiture, is Henry Inman, *an American.*

There has been no English writer in the present age whose works have been marked with more humor, more refinement, or more grace, than those o Washington Irving, *an American.*

The greatest lixicographer and philologist, since the time of Johnson, was *Noah Webster, an American.*

The inventors, whose works have been productive of the greatest amount of happiness to mankind, in the last century, were Godfrey, Fitch, Fulton, and Whitney—*all Americans.*

If one of these facts or estimates is doubted we can prove them by *forign* authorities, and so prevent all controversy.

From the Northwest.—Archibald McDonald Esq., who left the Columbia River about a year ago, has recently arrived at Canada West, via the Lake of the Woods, and *Millhacky* or one thousand Lakes; the whole distance of the route having been 2,850 miles. He reports that in latitude 52 north, he visited a lake called the Council Punch Bowl, situated 6,000 feet above the level of the ocean; and that from one side of this lake, a stream flows into the Columbia, and into the Pacific Ocean, and from the other side, a stream that discbarged into McKenzies' River, and thus into the Frozen Ocean. Above this lake, two mountains shoot their towering pinnacles 12,000 feet above the ocean level,—higher than the highest mountain of Europe.

Inland Navigation.—A keel boat with emigrants from New York, lately passed Cincinnati, having passed up the canal, entered the Erie Extension at Erie Pa., thence to Meadville, and down French creek and the Allegheny river to Pittsburgh, and down the Ohio, nearly 1000 miles to her destination. We should think this a beantiful route for some small fancy steamboat to run with a party for pleasure. Who will join us to make the excursion in May next?

Variety

"Madam," said a boarder to the landlady, "your coffee is excellent, what there is of it." "Is there not enough?" inquired the lady. "O yes, plenty of it, such as it is."

The Duke of Newcastle has an estate twenty miles in length. His castle cost $309,000, the chimney-piece alone having cost 72,000 dollars. The poor fellow is to be pitied.

Reaumer ascertained that 336 common bees weighed an ounce: about 5000 to a pound. Yet this number are capable of conveying more than two lbs. of honey at one load.

A writer in the European Agriculture, recommends to butchers, when killing animals, to avoid the presence of other animals of the same kind, as the sight is injurious to them.

The editor of the 'Picayune' says that he once saw John P. Gough in the character of *Deacon Grant*, in a burlesque on temperance, performed in the Lion Theatre in Boston.

The French ladies are adopting masculine habits in earnest. To see them with high-heeled boots, a segar in mouth, and cane in hand, creates no surprise in Paris.

The editor of the "Yankee Blade" having recently got married, is said to be *double-bladed*, and several of his brother eds are making quite a *handle* of the circumstance.

A lady asked Mr. Jekyll, "what was the difference between a solicitor and an attorney?" "Precisely the same," he answered, "as between a crocodile and an alligator."

The Charleston Patriot states that between 40,000 and and 50,000 sweet Oranges, of good flavor, have been grown this year on James' Island, opposite that city.

A man was arrested a few days since, for appearing in the streets in fashionable female attire. Had it not been for the huge bustle, there would have been no bustle about the affair.

At the Pottsville coal mines six hundred new houses for miners have been built within the last year. More than $1,000,000 have been expended in improvements.

Carter, the Lion King, has purchased the largest horse in England with the intention of sending him to the United States. The horse stands 20 hands (6 feet 8 inches) high, and large in proportion.

The barn of M. P. Flanders of Bradford, Vt., was burned on the 13th. Mr. F. had slept in the barn with "dog and gun,"—the barn having been fired before,—and had just left it when the fire appeared.

A Frenchman replied to an inquiry concerning his health, that "he had one very bad *cow*." He had learned that p-l-o-u-g-h was pronounced plow, and concluded that c-o-u-g-h must spell cow.

A devastating fire occurred last week at Sag Harbor, L. I. which destroyed from 30 to 40 houses and stores, laying most of the town in ruin. Loss estimated at $500,000.

Another conflagration has occured at Quebec, the flames of which were seen from Point aux Tremble, a distance of 21 miles. We have not learned particulars.

Silk raised in Vermont is said to be larger and stronger, and commands a higher price, than that grown in any of the southern or western states.

The Loss by the great fire at Wilmington, N. C., 4th instant, was $90,000--or $40,000 in merchandise and $50,000 in buildings. Insured for $63,000.

Messrs. Andrews & Bennett, with their improved submarine apparatus, have raised about 150 tons of iron from the ship Delaware, which was sunk in 1833.

The new steam factory building in Portsmouth, N. H., is to be the largest factory in the world, being 504 feet long, and calculated for 50,000 spindles.

A drop of rain, one-fourth of an inch in diameter, cannot attain a greater velocity in falling, than 33 feet per second.

The territory of Oregon extends 700 miles along the Pacific Ocean, and contains 360,000 square miles: seven times as large as the state of New York.

The western papers complain of the depredations of burglars from New York. This must be a mistake, as there appears to be none missing here.

The steam-propeller Independence has been placed on Lake Superier, being the first steam vessel that ever floated on that lake.

Mr. Israel Baker, of Stillwater, N. Y., a candidate for the Assembly, is one of a family of *fifteen* brothers, all of whom are said to be *true democrats.*

There has been raised in Rock County, Illinois, the present year, 700,000 bushels of wheat. The population of the county is only 7000.

Snow is said to have fallen to the depth of nearly three feet in Unity, N. H., about two weeks since. They have fine sleighing.

Since the Telegraph from Buffalo to Lockport has been in operation, the Lockport papers publish western news twelve hours in advance of the mail.

Ole Bull has ordered one of Mr. Chickering's superb Boston pianos, which he intends taking with him to Europe.

A beautiful girl in a ballroom at 2 A. M., is said to be very much like a cart wheel, because she is not only surrounded by *felloes*, but also *tired.*

Our paper is rather late this week, but with our improved facilities, it will be issued early in future

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From the Democratic Republican.

Winter.

BY MARY CARSON.

The winter is near with its cold chilling breath,
And Nature is robed in the garments of death,
Despoiled of their foliage, the trees now appear,
And the leaves of the forest, are yellow and sere.

The flowers have faded, their fragrance is gone,
Like the bright hopes I cherished in youth's early dawn,
Ere sorrow's dark mantle its shadows had cast
A gloom o'er the future, and the joys of the past.

The field and the meadows no longer are seen.
Arrayed in their beautiful vestments of green,
On the hill and the valley, is written decay,
And winds through the leafless trees mournfully play.

The birds they have left us, the woodland and grove,
No longer is vocal with echoes of love;
The hum of the insect no longer we hear,
And the prospect around us, is lonely and drear.

Though winter is near with its cold chilling breath,
And nature is robed in the garments of death,
Sweet hope softly whispers, though dark be thy reign,
The spring, lovely spring-time, will cheer us again.

The music of birds, and the hum of the bee
Shall greet us again with their notes glad and free,
And flowers in beauty again shall appear,
The heart of the mourner, to solace and cheer.

The fields and the meadows, in verdure arrayed,
And trees with their foliage, and dark cooling shade,
Afford a retreat from the sun's scorching ray,
And again through the wildwood we'll joyfully stray.

Yes, the spring shall return, (tho' perhaps not for me,)
And suns shed their beauty o'er island and sea,
Diffusing of life, and awaking to birth,
The forms that in embryo sleep in the earth.

The spring shall return, and long ere that day,
Will many a form once healthful and gay,
Be called to embark o'er Jordan's dark wave,
And pass to the silent embrace of the grave.

Our Father in Heaven, oh! grant we implore,
(Should spring with its beauties, here greet us no more,)
Ere death with its mandate shall summons away,
A faith that can triumph over change and decay.

May visions of glory from bright worlds of light,
As earth is receding, unveil to the sight,
Of spring-time eternal, where storms ne'er invade,
Of fields ever vernal, by time ne'er decayed.

There dwell the loved forms on that sunny shore,
That cheered us awhile—their sorrows are o'er,
Not given but lent by the Father of love,
To link earth with heaven, and draw us above.

The Blind Boy.

The day was bright and beautiful—
The boys to play had gone,
Save one who sat beside the door,
Dejected and alone;
And as the tones of merry sport
Came faintly to his ear,
He sighed, and from his swelling lids
He brushed the falling tear.

His little heart was rent with pain—
He could not join the play;
He could not run about the fields,
Nor by the brook-side stay;
The rolling hoop, the bounding ball,
The kite borne by the wind—
The acorn hunt was nought to him,
For he, alas! was blind.

He could not see the setting sun,
And watch the glowing skies—
The beauty of the moon and stars
Fell not upon the eyes—
The rainbow, when it spanned the clouds,
Was lost unto his sight—
And waiving woods, and sparkling streams—
For ALL to him was NIGHT!

These truths came fresh into his mind,
While sitting thus apart—
No wonder that the tear drops fell,
And heavy was his heart.
Ah! little did the youthful throng,
Whose hearts were full of joy,
Reflect upon the lonely state
Of that poor sightless boy!

Generosity.

The eye that moistens at the tale
Of sorrow and of pain—
The heart that opens to the wail
Of the sad orphan train—
O, be they mine—each heart and eye
Lost human nature dignify.

This world of beauty and of bloom,
Fair fields and golden skies,
The brilliancy of heaven assume.
To him who ne'er denies
Unto the feeble, sick and low,
The blessing he can well bestow.

CONSECRATED BELLS.—The practice of consecrating bells was introduced by Pope John XIV., A. D. 968. One of these bells bears the following inscription in old Monkish Latin:

Funera plango, fulgara frango, Sabbatta pango,
Excito lentos, dissipo ventos, Paco amentos.

Thus translated by Fuller:

Funera plango, ...	Men's death I tell By doleful knell.
Fulgaro frango, ...	Lightning and thunder I break asunder.
Sabbatta pango,....	On Sabbath, all To Church I call.
Excito lentos, ...	The sleepy head I raise from bed.
Dissipo ventos, ...	The winds so fierce I do disperse.
Paco amentos.	Men's cruel rage I do assuage.

Curious Arts.

TO PRODUCE EMBOSSED LETTERS OR FIGURES ON MARBLE.—Take some rosin varnish, and with a hair pencil, draw the letters, &c., on the marble, (which should be previously well polished,) and also cover with the varnish, every part of the face of the marble that is to remain plain. Lay the marble in a horizontal position, and make a border of oil putty round it, and then pour muriatic acid to the depth of half an inch on the marble. When ebullition ceases, the acid may be drained off, and the work examined; and if the letters are not sufficiently prominent, a fresh quantity of the acid may be added. When the work has been thus corroded to the depth required, the varnish may be washed off with spirits of turpentine. The acid that has been thus employed need not be lost, for a muriate of lime being thus formed, may be crystalized by a slight evaporation, and preserved for other purposes; or by the addition of a small quantity of sulphuric acid a sulphate of lime is precipitated, and the muriate may be poured off and be used again for the same or a similar purpose.

TO MAKE THE BEST COPAL VARNISH.—Take one pound of gum copal, and melt it in a flask over a brisk fire of charcoal; at the same time, in another flask, boil or heat to the point of boiling, one pint of linseed oil; as soon as the gum is melted, take it from the fire, and add the hot oil in small quantities, at the same time stirring or shaking it till they are thoroughly incorporated. Allow the mixture to cool below the boiling point of water, and then add nearly a quart of spirits of turpentine: cork the flask slightly, and expose it for a few days to the rays of the sun, which will make it work more smooth and shining. If a larger quantity is to be made, a copper boiler, that is small at the top will answer to melt the gum in. For ordinary or coarse work, a larger proportion of oil and a little rosin may be added. If oil is used, in which red lead and and litharge (in the proportion of half a pound of each to a gallon of oil) have been previously boiled, the varnish will the sooner dry.

TO MAKE A DELICATE PICTURE VARNISH.—Take two ounces of gum mastic and one ounce of gum sandarach, pulverize them to a powder, put them in a flask or glass bottle and add a pint of alcohol: shake the whole together till the gums are well mixed with the liquor and set it in a warm place to dissolve. When the gums have dissolved, strain the solution through a fine flannel, and put it in a clean bottle, corked tight, till wanted for use. This varnish may be applied to pictures, boxes, or other fancy articles, and will dry in one minute, and produce a beautiful waterproof gloss. When maps or pictures on paper are to be varnished, they must first be sized with a solution of gum-arabic in water, to prevent penetration by the varnish; and if the weather is cold, the article must be warmed prior to the application of the varnish.

New Inventions.

(We have notices on hand of a variety, but are constrained to defer them till next week.)

DISSIPATED HOGS.—A Cincinnati writer thus describes the character of certain hogs, in the immediate vicinity of whisky distilleries. "The slops with which these hogs are fed, have a strong dash of alcohol in them; and you can hear the hogs squeal at the distance of a mile when they get to quarrelling and spreeing towards night, after having 'liquored up' pretty plentifully. Look into the pens upon them, and you will see a fine lot of topers—dirty, bloated, red-eyed, ears and noses bloody and slit to pieces in their drunken fights. They were once, doubtless, decent hogs, but whiskey had ruined their morals."

SPEED ON RAILROADS.—Only four years ago the fact was extensively published as a wonder, that a train of cars on the Syracuse Railroad, was propelled by a famous new engine, the distance of 26 miles in 58 minutes; being at the rate of 27 miles per hour. On several railroads, at the present time, the passengers would express impatience if travelling at a less speed than 35 to 40 miles per hour: such a tedious jog-trot, truly.

INDIA RUBBER.—The 'Express' says that every article of household furniture, including bedsteads, bowls, and every kitchen utensil, except cutlery, may be manufactured of India rubber. Perhaps the editor would contract to furnish us with a stove and pair of tongs, of that material.

MORE AS WE THINK FOR.—The Lowell Courier says, "Lowell is destined to be a much greater city than any of us think for." Very much like what Timon said of the pig, "'Pend on't, massa, dat pig 'll weigh more 's you tink for, and I no doubt he weigh more as I tink for too."

A NEW CITY.—We are informed that a company has been formed, with a capital of $4,000,000, for the purpose of raising the banks of the Ohio river at its junction with the Mississippi, and laying the foundation of one of the greatest cities in America. So goes on enterprise and improvement.

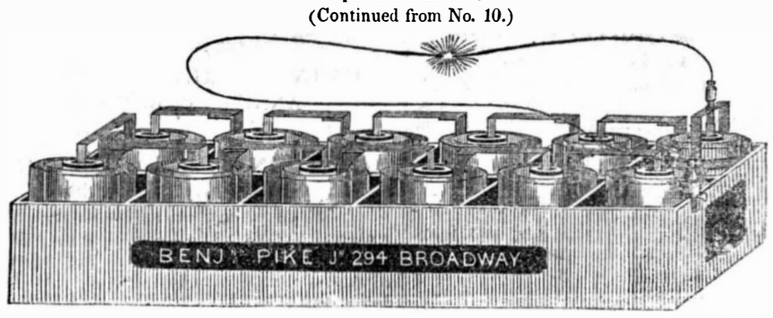
THE STEAMER NEPTUNE.—This elegant seaboat, which is the only one now running from New York to Providence, via Newport, has recently been painted and renovated throughout in the most handsome manner. The fare from New York to Boston is only $1,75.

WATER THIEVES.—Some ingenious thieves lately effected an entrance into the store of Mr. P. Dodge, which stands on a platform forming a part of Lewis' wharf in Boston, by passing a boat under the store and entering a hole through the floor, whereby they obtained about $200 worth of goods, and then paddled off.

UTILITY OF FROGS.—A lady in West Dedham the other day undertook to commit suicide by drowning herself. Just as she was about to take the fatal plunge, a huge bull-frog came to the surface af the water directly beneath her, and fairly frightened her from her purpose.

Galvanism.

(Continued from No. 10.)



BATTERIES.—The Galvanic battery which is in most general use at present, consists of a cylindrical cup made of plate copper, and about five inches in diameter, and four inches deep. Within this cup is another similar cup made of stout leather, of equal height, but an inch less in diameter than the first. Within the leather cup is a heavy cylindar of zinc about three inches in diameter. A piece of copper wire is attached to the rim of each of the metallic cups for the purpose of conducting the electricity or galvanic fluid from the copper cup, or negative pole of the battery, to the place of its application, and returning the same to the zinc cup or positive pole. When this battery is to be put into action, the space between the copper cup and the leather is filled with a saturated solution of sulphate of copper; and the space between the leather and the zinc is filled with a solution of sulphate of soda diluted with twice as much water as would be required in a saturated solution. The advantage of this arrangement is, that each solution operates better in its place than any other, and the leather prevents them from mixing, while it admits a free passage of the galvanic fluid from the zinc to the copper; and when the two opposite ends of the two wires are brought in contact, a circuit being formed, a sensible action takes place in the battery, and a current of galvanic fluid passes through the wires, insomuch that if the two ends of the wires are placed about an inch apart, and connected by a strip of gold or silver leaf, the leaf will instantly become red hot, and burn up by the electricity. This is called a single battery, or single pair: having but one pair of plates—and is such as is used for electrotyping, of which we shall speak hereafter. But for the purpose of electro-plating, and a variety of other purposes, a series of three or more single batteries are connected, as represented in the cut at the head of this article. This is called a compound battery, consisting of twelve single batteries or pairs. There is two modes of connecting the pairs in this battery: one of which is termed the direct connection, and consists in having all the copper cups connected to each other and all the zinc cylindars also connected; thus forming two sets of combined platos, which essentially constitute one great pair. The other mode is termed the consecutive connection, and consists in connecting the copper of the first pair to the zinc of the second; the copper of the second, to the zinc of the third, and so on through the series. In this battery the zinc of the first pair constitutes the grand positive, and the copper of the last pair, the grand negative pole of the battery; and the wires attached to these opposite poles, being brought nearly in contact, and connected by metalic foils, fine wires, or a piece of pointed charcoal, produce immediate and very brilliant combustion, as also represented in the engraving.

To be continued.

The Magnetic Telegraph.

This enterprise appears to go ahead with rapid strides. The line between New York and Philadelphia, is expected to go into operation in two or three weeks; and that from Philadelphia to Baltimore, by the first of February, from which time we may expect to have reports of speeches in Congress, as soon as they are spoken, if not sooner.

A Telegraph line throughout Canada, joining the U. S. northern line below Buffalo, via Hamilton and Toronto, to Detroit, Michigan, has been subscribed for.

The line or lines for the whole distance between this city and Buffalo, will probably be in operation in the course of the winter.

A new semi-daily paper under the title of "The Telegraphic News," has been commenced by George F. Nesbitt Esq., at the corner of Wall and Water streets; and is intended to publish the Teligraphic news, warm from the wires "at all hours." This *is* a great country.

COST OF TRANSMISSION.—The cost of transmitting an ordinary column of intelligence from Washington to New York, according to the rates already established and proposed, will amount to about $100, and will occupy about two hours' time in its transmission. This expense, however, will be divided between Baltimore, Philadelphia and New York; for the citizens of New York will not be chargeable with the expense of transmission of news of general interest, only from Philadelphia, which will amount to less than $50. Of course it may be expected that the publishers of the morning papers in this city will combine and share this expense, not equally, but in proportion to the circulation of each. The reports of each day's session of Congress, will, of course, be published in the papers of the following morning, in all the cities to which the lines may extend.

FIRST DISCOVERY OF MAGNETISM.—A shepherd of Italy by the name of *Magnes* was first to discover the properties of the loadstone, a mineral which gives polarity to iron, from the circumstances of his walking over a quarry, and small particles of this stone adhering to the iron nails in his sandals. In the year 1322, John de Gioga, a mechanic of Naples, first discovered that a piece of iron rubbed with the loadstone, and then suspended on its centre of gravity, had the property of pointing to the *north star*, and he was the first to apply needless on centres for the purpose of navigation. John tried his needles at different places in Italy, and moored a vessel in the Mediterranean to ascertain whether this magnetic power was the same on water as on land. The name of *magnet* was given to the *loadstone*, and to the *needle*.

LIGHTNING IN TEXAS.—A heavy storm with vivid lightning and tremendous peals of thunder, recently occurred at Galveston. Immediately after which the bay was seen strewed with thousands of dead geese and ducks in all directions. It is commonly reported, in this country, that fowls are not liable to be injured by lighining, being protected by the non-conductive property of their feathers; but it appears that in Texas they have a different sort of lightning which aims at the feathered tribe in preference to other objects.

REASONS FOR NOT PAYING.—A subscriber to the Christian Advocate being called on to pay a bill of $7,60 for that paper, excuses himself by saying that in the first place he never ordered the paper; and if he did, he never got it; and if he did, 'twas as an agent; and besides, he thinks he paid for it long ago; and if he didn't he has got nothing to pay; and if he had, he could plead the act of limitation.. Of course he ought to be excused, and have ths paper sent another year gratis.

A COINCIDENCE.—The propeller ship Massachusetts, which arrived last week from England, having run on the shoals near Nantucket, the first vessel that approached to her assistance was the *steamer Massachusetts*, from New Bedford.

Railroad Intelligence.

The Western and Atlantic (Ga.) Railroad is now open to Coosa depot, in Cass county.

The whole required amount of $1,000,000, for the Main section of the Atlantic and St Lawrence Railroad has been subscribed, and a part of the road will soon be put under contract.

The Central Railroad in Michigan is nearly completed as far as Kalamazoo, and the cars will commence running on or about the first of January.

A grand project is being agitated in England and Canada, for the construction of a continuous railroad from Halifax in Novascotia, viva Canada west and over a northern route to the Pacific Ocean.—They will probably have more time to consider of it, before the road is located and under contract.

THE TRIUMPHS OF MOBOCRACY.—(The following article from the Boston Mail, so nearly expresses our sentiments, that we copy it entire.) We have been looking at the proceedings of the late Convention at Carthage in Illinois, held for the purpose of expelling the Mormon fanatics. We find that they put the matter directly on the ground that the Mormons were a public *nuisance*, and as such might be legally abated by the people in their sovereign capacity, without law and without trial! This was the ground taken by the ass of a Judge in Kentucky, in the case of the persons arrested for removing Cassius M. Clay's printing office; and we now see how such physic begins to work. Armed with the panoply of such a legal decision, what is there to prevent the majority from trampling upon the rights of the minority as they please? The majority have but to assemble and declare the minority a *nuisance*, and then go to work and abate the nuisance in their own way. And where was there ever a majority that did not consider the minority a nuisance? Under this Kentucky decision, there are no rights of property, and the minority only exists by sufferance. Thus in Nauvoo, containing some ten of fifteen thousand people, with a large property, the sufferance has ceased, and the sound of hammers "closing rivets up" tells that the whole people must remove or be annihilated! When such principles of law as these shall be universally adopted, there will be very little in this world worth living for.

FLORIDA WINTER.—The St. Augustine News, after painting a Florida winter in gayest colors, with smiling green foliage, fresh sea-breeze and genial sun, with temperature at 80, asks, "Who would live a winter at the North that has ever passed one in Florida." Probably most of our population would be quite as willing to pass a winter in Maine as a summer in Florida; but we may rationally anticipate that within twenty years we shall not only have continuous railroads from Maine to Florida, but that the railroad fares will be so low that every mechanic who is industrious and diligent in business, can afford to pass his winter at the South without neglecting his summer business in the northern states.

A VALIANT LADY.—Mr. S. Wheeler, of Stratford Ct., discovering a light in his barn on the morning of Sunday week, and going out to ascertain the cause, found a man in the act of setting fire to the hay and straw on the barn floor. In attempting to seize him, a scuffle ensued, and Mr. W. was thrown down. In the meantime, Mrs. Wheeler came out with a pail of water, extinguished the fire, and went to her husbands aid. She broke the pail over the assailant's head, and after a good deal of exertion the fellow was secured.

MISCHIEF OUTRAGEOUS.—Since the Telegraph between Buffalo and Lockport, N. Y., has been in operation, which is only a few days, the wire has been broken no less than three times; and several of the posts have been sawd off. It is to be hoped that laws will soon be enacted making the penalty extra severe for such misdemeanors. Otherwise, these excellent facilities of intelligence will prove worse than useless.

Admonition to Editors.

It is written, James iv. 17, "*To him that knoweth to do good, and doeth it not, to him it is sin;*" plainly implying that the responsibility of every man is in proportion to his knowledge and facilities of doing good in the world. It was recently remarked by one of the most popular of the New York clergymen, that among the special occasions of thanksgiving, was the growing disposition of the general newspaper press to publish religious intelligence and topics of moral bearing, insomuch that he was inclined to consider the almost entire secular press of the city as enlisted on the side of religion. This was indeed a compliment, and might have been as such intended; but it will have had the effect, in some measure, to emulate rational and considerate editors to write on religious subjects more freely than they might otherwise have done. And why should they not? There is no class, the clergy even not excepted, who have at command so extensive facilities of doing good, by correcting the morals of the community, and advancing the cause of the christian religion, as the editors of the *secular* papers. The ostensibly religious papers, like many clergymen, are expected to advocate what is called religion, not on account of its excellence, but, *as a matter of course.* They are employed for that purpose, and that *is* their regular business; wherefore *their* productions no more prove to the free and independent minds of Americans that their respective sects are the only true, or that the christian religion is excellent, than those of a political editor proves that *his party* hold the only true political sentiments: but whatever is written or selected and published by the editor of a secular paper, in commendation of christian principles, savors much more of disinterested sincerity, and will command or effect a much greater influence on the minds of its readers, than would the same thing published by one who is ostensibly employed for the express purpose of publishing such matter. The influence and effect of a genuine and lively religious article, or item, in the columns of a secular paper, is incalculable. They produce durable impressions on those persons especially whose minds have not become poisoned by the prevalent infidelity of the age; and this influence will materially affect the characters and lives of such, in future years, and extend even to their posterity. Then let every editor reflect on his own responsibility in the improvement of the extraordinary opportunities and facilities of doing good, which are providentially placed at his command, and bear constantly in mind the ever-speaking admonition, "to him that knoweth to do good and doeth it not, *to him it is sin.*"

AN ENDLESS JOURNEY.—We are all travellers.—All men have begun a journey which can never end. Awake or asleep, at home or abroad, all men are moving on with silent rapidity to the world of spirits and of eternal retribution. Time lingers not. Its swift current is bearing men onward to their endless journey. Their career is not interrupted by the river of Death. It is crossed in a moment, and down the traveller goes the track of interminable ages. And yet how few of the passing multitude, who throng the great thoroughfare of human life, are duly effected or influenced by the momentuous results which will attend them in all the course of their future being. The following which we may quote well expresses the statement.

"It is a solemn thing to be always journeying, without a moment's cessation or rest, at the same time to be moving on with great rapidity from our point of departure, without lessening in the least the distance between us and our point of destination.—It is the journey of eternity. There is an immense rapidity in the revolution of the wheels of duration. Onward we are rolled with the most eager velocity. Each revolution tells with solemn interest upon the future, but without the least lessening the distance in prospect. There are two roads across the 'undiscovered country, to which we must soon take our departure. On the one or the other of these we must travel through the endless cycles before us.—On the one our sun goes not down, neither does our moon withdrew itself. God is our everlasting light and the days of our mourning are ended, always in the focal center of infinite light and love, with that blissful center changing, only to enlarge our sphere of vision, and to increase our bliss. On the other hand we endlessly journey on through the land of darkness itself, and of the shadow of death, without any order, and where the light is as darkness. And now, reader, we are shaping our course for this journey. As our course is across the journey of time, such to us will be the journey of eternity."—*Mrs Child.*

LETTER OF PLEBIUS LENTILUS TO THE SENATE OF ROME, CONCERNING JESUS CHRIST.—There appeared in these our days a man of great virtue, named Jesus Christ, who is yet living among us, and of the Gentiles is accepted as a prophet of truth; but his own disciples call him the son of God. He raiseth the dead, and cureth all manner of diseases. A man of Stature somewhat tall and comely, with very reverend countenance, such as the beholders both love and fear—his hair of color of the chesnut fully ripe, plain to his ears, whence downward it is more orient, curling and waving about his shoulders.—In the midst of his head is a seam or partition of his hair after the manner of the Nazerites.—His forehead plain and very delicate—his face without spot or wrinkle, beautiful, with a lovely red.—His nose and mouth so formed as nothing can be reprehended—his beard thickish, in color like his hair not very long, but forked,—his look innocent and mature; his eyes gray, clear and quick. In reproving he is terrible; in admonishing, courteous and fair spoken; pleasant in conversation, mix'd with gravity.—It cannot be remembered that any have seen him laugh, but many have seen him weep. His proportion of body most excellent; his hands and arms most delicate to behold. In speaking, very temperate, modest and wise. A man for his singular beauty surpassing the children of men.

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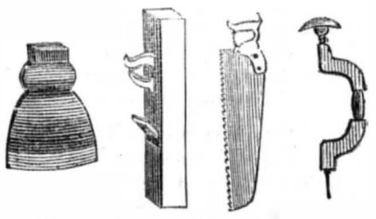

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